

**Environmental Assessment  
For Implementation of the Updated  
Integrated Natural Resources Management Plan  
Homestead Air Reserve Base, Homestead, Florida**



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## List of Acronyms and Abbreviations

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ACC	Air Combat Command
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
AOCs	Areas of Concern
BNP	Biscayne National Park
CAA	Clean Air Act
CDMP	Comprehensive Development Master Plan
CEQ	Council on Environmental Quality
DoD	Department of Defense
EA	Environmental Assessment
ESCZ	Explosive Safety Clear Zone
F.A.C.	Florida Administrative Code
FAA	Federal Aviation Administration
FDEP	Florida Department of Environmental Protection
FDNR	Florida Department of Natural Resources
FNAI	Florida Natural Areas Inventory
FONSI	Finding Of No Significant Impact
gpm	Gallons Per Minute
HARB	Homestead Air Reserve Base
HARS	Homestead Air Reserve Station
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
NAAQS	National Ambient Air Quality Standards



## List of Acronyms and Abbreviations, Continued

NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NPS	National Park Service
PM	Particulate Matter
SAIA	Sikes Act Improvement Act (1997)
SFRPC	South Florida Regional Planning Council
SFWMD	South Florida Water Management District
SIP	State Implementation Plan
TSP	Total Suspended Particulates
U.S.C.	United States Code
UDB	Urban Development Boundary
UEA	Urban Expansion Area
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USDA NRCS	United States Department of Agriculture Natural Resources Conservation Service
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOCs	Volatile Organic Compounds
WRAP	Wetlands Rapid Assessment Procedure

## 1.1 Introduction

This environmental assessment (EA) has been developed for use by the United States Air Force Reserve Command (AFRC) in accordance with 32 Code of Federal Regulations (CFR) 989, as amended, the United States Air Force (USAF) *Environmental Impact Analysis Process* and Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*.

As part of its mission, the USAF has chosen to be a leader in environmental and natural resources stewardship both now and in the future. This dedication and commitment to natural resources management is demonstrated by the development and implementation of an Integrated Natural Resources Management Plan (INRMP). This EA was prepared to implement the updated *Homestead Air Reserve Base INRMP, Homestead, Florida* (referred to hereafter as the “HARB INRMP”). This INRMP is a dynamic document that will be maintained and adapted, as necessary, to reflect updated natural resources information.

## 1.2 Location and Mission

HARB is located near the southern tip of the Florida peninsula, approximately 20 miles south-southwest of the city of Miami and adjacent to the eastern boundary of the city of Homestead, and 2.0 miles inland from Biscayne Bay and the Atlantic Ocean. The primary mission of HARB is to provide a facility for peacetime training of reservists in the 482<sup>nd</sup> Fighter Wing who maintain and operate HARB. Additional functions of HARB are to maintain and operate facilities, to provide administrative and logistic support to tenant activities, and to perform other such functions and tasks as assigned.

## **1.3 Summary of Key Environmental Compliance Requirements**

### **1.3.1 National Environmental Policy Act of 1969**

The National Environmental Policy Act (NEPA) is a federal statute requiring the identification and analysis of potential environmental impacts of proposed federal actions before those actions are implemented. NEPA established the Council on Environmental Quality (CEQ) that is charged with the development of implementing regulations and ensuring agency compliance with NEPA. CEQ regulations mandate that all federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that may affect the environment. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through informed federal decisions.

### **1.3.2 INRMP and NEPA Integration**

To comply with NEPA, the planning and decision-making process for implementing federal actions involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace the procedural or substantive requirements of other environmental statutes and regulations. It addresses these requirements collectively in the form of an EA or an environmental impact statement, providing the decision-maker a comprehensive view of major environmental issues and requirements associated with the proposed action.

## **1.4 Interagency and Public Coordination and Review**

Information used in the preparation of this INRMP was gathered from various military and non-military sources, field surveys and investigations, and previously prepared plans and programs for HARB. Government and non-government input was provided in the development of the INRMP. The INRMP was produced with the technical assistance and additional guidance on regional issues from representatives of the United States Fish and Wildlife Service (USFWS), the Florida Fish and Wildlife Conservation Commission, Miami-Dade County Department of Environmental Resource Management, Miami-Dade Natural Areas Management, and the National Park Service.

Public and concerned organizations, including minority and low-income, disadvantaged, and Native American groups, were notified of the findings and conclusions of this EA by an announcement of the availability of a Finding of No Significant Impact (FONSI) in the local

newspapers and by the availability of hard copies of the FONSI, EA and the HARB INRMP for public review. The copies of the aforementioned documents were made available for a 30-day public review (between 20 September and 20 October 2009) at the Homestead branch of the Miami-Dade County Library at 700 N. Homestead Boulevard in the City of Homestead. Readers were instructed to direct any questions regarding the aforementioned documents in writing to the Public Affairs Office of HARB. No written comments were received during the 30-day review period.

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## 2

# Description of the Proposed Action and Alternatives

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## 2.1 Purpose and Need

The USAF is responsible for the conservation of natural and cultural resources on its bases through effective environmental planning. It is USAF policy (AFPD 32-70) to restore, improve, preserve, and properly utilize natural resources and otherwise comply with all applicable state and federal environmental statutes, regulations, and policies within the constraints of the military mission.

The purpose of the updated INRMP is to meet statutory requirements under the Sikes Act Improvement Act (SAIA) of 1997. In November 1997, the Sikes Act, 16 United States Code (U.S.C.) 670a et seq., was amended to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military bases. To facilitate this program, the amendments require the secretaries of the military departments to prepare and implement INRMPs for each military base in the United States unless the absence of significant natural resources on a particular base makes preparation of a plan for that base inappropriate. The SAIA requires each base to prepare an INRMP that provides for the following management objectives, to the extent that such activities are consistent with use of the base for military preparedness:

- Conservation and rehabilitation of natural resources on the Base;
- The sustainable multipurpose use of the resources, to include hunting, fishing, trapping, and non-consumptive uses; and
- Subject to safety requirements and military security, public access to the Base to facilitate such uses.

As required by the SAIA, the plan must, to the extent appropriate and applicable, provide for:

- Fish and wildlife management, land management, forest management, and fish and wildlife-oriented recreation;

- Fish and wildlife habitat enhancement or modification;
- Wetland protection, enhancement, and restoration, where necessary for support of fish, wildlife, and plants;
- Integration of, and consistency among, the various activities conducted under the plan;
- Establishment of specific natural resources management goals and objectives;
- Sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources;
- Public access to military bases that is necessary or appropriate for the sustainable use of natural resources, subject to the requirements necessary to ensure safety and military security;
- Enforcement of applicable natural resources laws (including regulations);
- No net loss in the capability of the Base's lands to support the military mission of the Base; and
- Such other activities as the USAF determine to be appropriate.

## **2.2 Proposed Action (Implementation of Updated INRMP)**

The Proposed Action is to update the existing INRMP and practices at HARB in a manner that is consistent with the military use of the property and the objectives established in the SAIA as mentioned above.

The goal of the INRMP is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner consistent with the military mission; integrates and coordinates management of all natural resources; provides for sustainable multipurpose uses of natural resources; and provides for public access and use of natural resources subject to safety and military security considerations. The INRMP provides for active partnering, information sharing, and participation of all stakeholder parties and moves natural resource management from a reactive philosophy to a proactive one.

Management objectives are to integrate fish and wildlife management, land management, and management for outdoor recreation opportunities as practicable and consistent with the military mission and established land users within HARB boundaries. The INRMP focuses on a 5-year planning period that is consistent with the timeframe for management measures described in the INRMP. This planning period began in Fiscal Year (FY) 2010 and ends in FY 2014. Additional environmental documentation may be required as projects proposed in the INRMP evolve and/or as



management objectives within the 5-year timeframe are modified due to changes in military mission, Air Force Instructions (AFIs), or federal and state legal requirements.

## **2.3 Alternatives to the Proposed Action**

The development of the proposed management practices for the INRMP included a detailed evaluation of alternative management scenarios. This analysis involved the review of accepted criteria, standards, guidelines, as well as laws and executive orders for natural resources management. Furthermore, the analysis included a comprehensive review of land areas on the Base, resources present, and each of the land areas role within the overall mission of the Base. Once the mission and resources for each land area was evaluated, various resource management scenarios were evaluated to determine the appropriate management measures for each land area.

The No-Action alternative is the continued implementation of the objectives and practices outlined in the previous INRMP developed in 2004. Ongoing practices for management of natural resources at HARB would continue, and there would be no change to the objectives outlined under the current INRMP. The No-Action alternative serves as a baseline against which federal action can be evaluated.

## **2.4 Scope of Analysis**

The potential environmental effects associated with the Proposed Action and No-Action alternatives are required to be assessed in compliance with NEPA, CEQ regulations, and USAF Instructions. This EA identifies, documents, and evaluates the effects of implementing the HARB INRMP. Section 3.0 of this EA describes the environmental and socioeconomic resources and conditions most likely to be affected by the implementation of this INRMP. Section 4.0 identifies the potential environmental effects associated with the Proposed Action and the No-Action alternatives, as well as mitigation measures where appropriate.



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Section 3.0 describes the environmental and socioeconomic resources and conditions most likely to be affected by implementation of the INRMP, as required by NEPA, CEQ guidelines, and 32 CFR 989. These resources and conditions include the following areas: air quality, noise, land use and socioeconomic conditions, geological resources, water resources, biological resources, cultural resources, and hazardous waste. This section also provides the baseline conditions from which to identify and evaluate environmental and socioeconomic changes.

### **3.1 Air Quality**

The Clean Air Act (CAA), which was last amended in 1990, requires the United States Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The USEPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called “criteria” pollutants (USEPA, 2002a). Criteria pollutants include ozone (smog), lead, carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and particulate matter (PM) of 10 microns or less in diameter (PM<sub>10</sub>). It should be noted that ozone does not occur directly from any source, but results from a series of reactions between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs) in sunlight.

All areas within the state of Florida are designated with respect to the concentrations of each of these six criteria pollutants. The designations include “attainment,” in compliance with the standards; “nonattainment,” not in compliance with the standards; or “unclassifiable,” insufficient data to classify (Florida Department of Environmental Protection [FDEP], 1999).

HARB is located within the Southeast Florida Intrastate Air Quality Control Region (SF-IAQCR). This region consists of Broward, Miami-Dade, Indian River, Martin, Monroe, Okeechobee, Palm Beach, and St. Lucie counties. Ambient air quality within the SF-IAQCR and subsections of it are monitored for NO<sub>x</sub>, CO, SO<sub>2</sub>, ozone, particulate matter with aerodynamic diameters less than 2.5

microns (PM<sub>2.5</sub>), particulate matter with aerodynamic diameters less than 10 microns (PM<sub>10</sub>), and total suspended particulate to determine compliance with NAAQS.

Homestead ARB is located adjacent to the city of Homestead within Miami-Dade County, Florida. The County is classified as in attainment with the following air quality standards: CO, SO<sub>x</sub>, and PM<sub>10</sub>. As of June 15<sup>th</sup>, 2005 Miami-Dade County is no longer subject to the 1 hour standard for ozone. This is on the EPA website at <http://www.epa.gov/oar/oaqps/greenbk/oindex.html>.

## 3.2 Noise

Noise is generally defined as unwanted sound and can be any sound that is undesirable because it interferes with communications, has enough intensity to damage hearing or is otherwise annoying. Human response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and receptor, receptor sensitivity, prevailing winds, and time of day.

The day night average sound level (L<sub>dn</sub>) is the energy-averaged sound level measured by summation and averaging of sound exposure level values during a 24-hour period. L<sub>dn</sub> is the preferred noise metric of the U.S Department of Housing and Urban Development, Federal Aviation Administration (FAA), USEPA, and Department of Defense (DoD; FICON, 1992).

The noise environment at HARB is dominated by military aircraft operations (aircraft warm-ups, maintenance and testing, taxiings, takeoffs, approaches, and landings). The most recent Air Installation Compatible Use Zone (AICUZ) Study was prepared for HARB in 2007.

## 3.3 Land Use and Socioeconomic Conditions

### HARB Land Use

HARB occupies approximately 1,943 acres. Land use activities are planned and managed to support the Base's military mission, which is *"to train and equip reservists to respond to wartime and peacetime tasking as directed by higher headquarters."* In the broadest sense, there are three basic mission-driven land uses on HARB: (1) the airfield, (2) the ammunition storage area and safety buffer associated with the Explosive Safety Clear Zone (ESCZ) arcs, and (3) the urban/industrialized area.

The Administrative and Industrial Support area and Airfield are comprised of land use activities that are essential for accomplishing the Base's military mission. This area functions as the urban core of the Base and houses several major tenant commands. It includes aviation support

facilities (hangers and maintenance workshops), fuel storage, administrative facilities, and military personnel support facilities, as well as the airfield complex (runway, taxiway, and flightline).

The majority of the land east and south of the runway is open space and wetland, with some scattered forested areas. With the exception of the Hush House and Southeast Triangle areas, wetlands are predominate land use features. These wetland areas, in part, are used for airfield drainage. The enclosed structures of the Hush House area are used for noise reduction for aircraft engine testing. The Southeast Triangle contains the reservoir and pump house and is the single point for surface water discharge from the Base.

The western portion of the Base contains the Munitions, Grenade Range and Reserves, Northeast Grassland, Southwest Clear Zone, and OU-2 areas. Collectively, these areas are largely unimproved and comprise the total area contained within the ESCZ arcs. Reserve bivouac training is conducted in the western boundary of the Grenade Range and Reserves area.

## **Regional Land Use**

Land uses adjacent to HARB are principally agriculture, low- to medium-density residential and vacant land. To the east and south of HARB, land-use activity is primarily agriculture with some residential development. The majority of the agricultural land located near HARB is used for commercial plant nurseries. Beyond the agricultural land located east and south of HARB are large tracts of vacant land unprotected from development. Some agricultural land abuts HARB to the north, but the majority of land north of HARB is developed property associated with the former Homestead Air Force Base (AFB).

Most urban development occurs north and west of HARB and is within the Miami-Dade County urban development boundary (UDB). The UDB, as defined in the 2000 Miami-Dade Comprehensive Development Master Plan (CDMP), includes portions of the county where urban development is acceptable. Generally, the UDB aligns with the U.S. 1 and State Highway 821 (Florida Turnpike) corridor, and incorporates the city of Homestead, as well as Florida City, and HARB (see INRMP, Figure 3-7). The urban expansion area (UEA) as defined in the CDMP delineates the area where development may be warranted within the next 20 years. The UEA encompasses property immediately north of HARB (see INRMP, Figure 3-7). Although the extent of growth in south Miami-Dade County over the next 20 years is unclear, it can be surmised that the majority of growth will occur within the UDB and the UEA boundaries.

## **Socioeconomic Conditions**

The regional community of HARB is defined by the city of Miami to the north, the Homestead-Florida City areas to the west and southwest, BNP to the east, and Everglades National Park to the west.

The population of Homestead increased from 13,674 in 1970 to 20,668 in 1980; and to 26,694 in 1990. According to MyFlorida.com and the City of Homestead, there are 31,909 people in Homestead. However, a review of the U.S. Census data reveals that this number comes from the 2000 census. The U.S. Census estimates that the population grew to 56,601 in 2007, the most recent year in which an estimate is available. This is an increase of 56 percent.

Florida City is located approximately 5 miles southwest of HARB.. Over the last 30 years, the population of Florida City has experienced both growth and decline. Between 1980 and 1990 the city's population decreased 3.2% (2,804 people). Between 1990 and 2000, the population increased by 31.2% to 7,843 (SFRPC, 2000). The Florida City's population is expected to increase to 13, 278 by 2015 (USAF and FAA, 2000). A significant growth in residential and commercial land use has accompanied the more recent population growth, while little industrial growth has occurred.

HARB contains approximately 700 personnel, half military and half civilian, while an additional 200 to 300 reservists are also at the base for training, but are not full-time employees. No residential population exists on the Base and there is no public access.

## **3.4 Geological and Soil Resources**

HARB is located within the Atlantic Coastal Ridge. The Atlantic Coastal Ridge extends south from the Jacksonville vicinity along Florida's east coast. The southern extension of the Atlantic Coastal Ridge is called the Miami Ridge, which is underlain by very porous oolitic limestone that was formed under warm, shallow marine waters during higher sea levels of the Pleistocene era about two million years ago (United States Department of Agriculture Natural Resources Conservation Service [USDA NRCS], 1996). The Miami Ridge is relatively narrow and sandy, bounded by coastal marshes and mangrove swamps to the south and east and the Everglades to the west, and forms the highest ground elevations (up to 10 feet) in southeastern Miami-Dade County.

There are six different soil map units within HARB. INRMP Table 3-4 summarizes the important characteristics and the coverages of soil types on HARB (USDA NRCS, 1996). INRMP Figure 3-3 indicates the general location of the soil units on the Base. In general, approximately 74% of HARB land consists of Urban Land/Udorthents-Urban Land Complex soil types (see INRMP Table 3-4). Udorthents are nearly level areas of extremely stony fill material that are almost always



used for urban or recreational development, and are limited in their ecological potential. Limitations for this soil unit include wetness and the presence of underlying organic material. These limitations may be overcome by the use of stable fill material and the addition of in some cases extensive drainage systems (USDA NRCS, 1996).

### 3.5 Water Resources

Water resources include surface water (canals, lakes and ponds, and a reservoir immediately off base), ground water, wetlands, and flood-prone areas. Natural drainage on HARB is generally poor due to the relatively flat surface and the location of the water table, which is either at or near the land surface of HARB. Storm water runoff is collected in an internal drainage system of canals, swales, ditches, and pipes, most of which eventually discharge into the Boundary Canal System.

#### Boundary Canal System

The Boundary Canal system consists of the Boundary Canal, the Flightline Canal, several associated drainage canals/ditches, and the storm water reservoir. The Boundary Canal surrounds HARB property (Air Force Center for Environmental Excellence [AFCEE], 2001; see INRMP, Figure 3-5). A levee that runs along the outer bank of the Boundary Canal prevents runoff originating outside the Base from entering the property except for a small portion at the northernmost end of the Base at a point along SW 288<sup>th</sup> Street (AFCEE, 2001). The Boundary Canal is divided into two major segments (see INRMP, Figure 3-5):

- The **west-south (W-S)** Boundary Canal segment begins in the northwestern corner of HARB at Biscayne Drive (SW 288<sup>th</sup> Street; HARS, no date). The segment flows along the west and south perimeters of the Base and leads to the storm water reservoir at its southeastern edge. The total length of the W-S segment is approximately 25,000 feet (4.9 miles; AFCEE, 2001).
- The **north-east (N-E)** Boundary Canal segment begins at the north end of the former Homestead AFB south of the former golf course at SW 280<sup>th</sup> Street (Walden Drive). It flows east past Mystic Lake and along the north and east perimeters of the Base. The N-E segment leads to the storm water reservoir at the southeast corner of the Base. The total length of the N-E segment is reported to be approximately 15,400 feet (2.9 miles; AFCEE, 2001).

#### Storm Water Reservoir

The storm water reservoir is located on the eastern side of the Base and receives flow from the W-S and N-E segments of the Boundary Canal system (see INRMP, Figure 3-5). The reservoir is approximately 300 feet wide and 900 feet long (AFCEE, 2001). Typical depths are estimated to range

between 10 to 20 feet. Assuming an average depth of 12 feet, the reservoir volume is estimated to be 46.3-acre feet (AFCEE, 2001).

A control structure is located at the eastern edge of the reservoir, which discharges water into the culvert between the reservoir and Military Canal (AFCEE, 2001). This control structure is normally open and provides passive flow between the canal and the reservoir, but is closed during pumping operations (AFCEE, 2001). During periods of heavy rainfall, three 100,000-gallon manual pumps with a total combined maximum rate of 300,000 gallons per minute (668 cubic feet per second; AFCEE, 2001) pump water to the Military Canal. These pumps were designed to begin pumping at an elevation of 3.0 feet National Geodetic Vertical Datum (NGVD) and shut down at an elevation of 2.5 feet NGVD (AFCEE, 2001).

### **Military Canal**

Military Canal is located immediately east of the pump house and storm water reservoir (see INRMP, Figure 3-5). Military Canal is one in a series of canals that serve as a part of a complex water management system to control flooding, reduce salt water intrusion, maintain water flow into the Everglades, and provide recharge for municipal wellfields. The canal is approximately 11,400 feet long with an average width of 40 feet (AFCEE, 2001). A salt water control structure (S20G) is located along Military Canal approximately 1.4 miles east of the reservoir (AFCEE, 2001). According to the South Florida Water Management District (SFWMD), this structure controls the flow of Military Canal to minimize salt water intrusion from Biscayne Bay. The majority of the flow from Military Canal into Biscayne Bay is from HARB; however, agricultural lands, commercial nurseries, and other unused areas between HARB and Biscayne Bay also contribute to runoff into the bay (USAF and FAA, 2000). The estimated average annual discharge from Military Canal to Biscayne Bay, using the Surface Water Management Model, is 4,560 acre-feet (USAF and FAA, 2000). This represents about 1.1% of the total freshwater input to southern Biscayne Bay (USAF and FAA, 2000).

### **Lakes**

Three lakes are within the 1,943-acre area, comprising approximately 30.2 acres or less than 2% of HARB. All the lakes on HARB are human-made, created from limestone borrow pits many decades ago. The 14.5-acre Phantom Lake is located along the western boundary of the Base, just north of the Munitions Storage area (see INRMP, Figure 3-5). A maintained unpaved road encircles the lake and provides access (HARB, 2003a). The Twin Lakes also referred to as the North and South Flight Line Lakes (7.7 and 8.0 acres, respectively) lie southeast of the runway (see INRMP, Figure 3-5). The northern of these two lakes has a surface water connection (via short culvert) to the Boundary Canal System (USAF and FAA, 2000).

## Wetlands

During 2001, federal and state jurisdictional wetland surveys were conducted on HARB (HARB, 2003b). Of the nearly 1,943 acres within HARB, approximately 233.5 acres or 12% of the total land area have been identified as jurisdictional wetlands (see INRMP, Figure 3-5 and Volume II, Appendix D). All surveys were conducted in accordance with the United States Army Corps of Engineers (USACE) wetlands delineation manual (1987) and FDEP methods identified in Chapter 62-340, F.A.C. Additional details on the survey methods and results are provided in the *Wetlands Identification Report and Management Component Plan* in Volume II, Appendix D.

In general, types of wetlands occurring on the Base include wet marsh, wet prairie, or forested wetlands. The wetland areas are primarily located within the runway infield and southeast of the runway extending in a southwest to northeast direction. Approximately 49 acres or 21% of wetlands are located within the infield of the taxiway and runway and appear to serve as drainage basins (HARB, 2003b). Specific locations of wetlands on HARB are illustrated in Volume II, Appendix D, on Figure D-3-2; Appendix D also contains the HARB wetlands rapid assessment procedure (WRAP) report that was conducted to assess the ecological quality of each identified wetland community based on its own attributes and characteristics. The WRAP is the state's methodology developed by the SFWMD and is used by the USACE for determining impacts to jurisdictional wetlands.

## Flood-Prone Areas

Maps issued by the Federal Emergency Management Agency (FEMA) in 1996 indicate that the eastern end of the Base, generally running on a north-south axis through the runway, would be flooded from a 100-year flood event (see INRMP, Figure 3-5; USAF and FAA, 2000). Flooding on HARB most likely would result from significant periods of heavy rainfall and would less likely be attributed to coastal flooding and storm surges.

It is estimated that Category 1 and 2 hurricanes would not cause inundation of the Base, but a Category 3, 4, or 5 hurricanes could cause tidal surges ranging from 11 to 16 feet NGVD. Maximum surge height for sustained winds of 145 miles per hour has been estimated at around 8.5 feet (AFRC, 2004).



## 3.6 Biological Resources

### 3.6.1 Threatened, Endangered and Protected Species

There is only one federally listed threatened or endangered plant or animal species known to occur regularly within the cantonment area of HARB. This is the American crocodile (*Crocodylus acutus*), which is occasionally seen near the Twin Lakes area. On occasion, the federally listed wood stork (*Mycteria americana*) is seen in single or small groups (up to ten) on the Base, but there is marginal foraging potential on HARB and their occurrence is infrequent while nesting is not considered likely to occur.

#### State-Listed Wildlife Species

There are several state-listed animals known to occur on HARB, primarily bird species and the American alligator (*Alligator mississippiensis*). The alligator is listed as a species of special concern in Florida but federally listed as “threatened due to similarity of appearance” to the endangered American crocodile (*Crocodylus acutus*). While most of the bird life found on HARB are transient or migratory species associated with wetlands and other surface water bodies, the Florida burrowing owl (*Athene cunicularia floridana*) is established and can be found in several family groups in the grassy areas near the runway in the area of the control tower and other areas on base. All birds listed in Table 3-1 are also federally protected under the United States Migratory Bird Treaty Act.

Table 3-1		
State-Listed Wildlife Species Recently Known to Occur on Homestead Air Reserve Base, Homestead, Florida		
Common Name	State Status	Species Name
<b>Birds</b>		
Limpkin	SSC	<i>Aramus guarana</i>
Little blue heron	SSC	<i>Egretta caerulea</i>
Reddish egret	SSC	<i>Egretta rufescens</i>
Snowy egret	SSC	<i>Egretta thula</i>
Tricolor heron	SSC	<i>Egretta tricolor</i>
White ibis	SSC	<i>Eudocimus albus</i>
American kestrel	T	<i>Falco sparverius</i>
Florida burrowing owl	SSC	<i>Athene cunicularia floridana</i>
Least tern	T	<i>Sterna antillarum</i>
<b>Reptiles</b>		
American alligator	SSC	<i>Alligator mississippiensis</i>

Key:

SSC = Species of Special Concern

T= Threatened

## State-Listed Plant Species

State-listed plant species have been documented from a number of surveys conducted over the last ten years and are primarily found in the pine rockland habitat (see Table 3-2). Although bases are not required to provide similar conservation measures for species protected by state law as those required under the Endangered Species Act, protection measures should be adopted when not in conflict with the military mission.

<b>Table 3-2</b> <b>State-Listed Rare Plant Species Occurring or Reported to Have Occurred within</b> <b>Homestead Air Reserve Base, Homestead, Florida</b>		
<b>Scientific Name (common name)</b>	<b>State Status</b>	<b>Habitat Description</b>
<i>Bletia purpurea</i> (pinepink orchid)	T	Pine rocklands.
<i>Byrsonima lucida</i> (locust berry)	E	Native hardwood shrub, pine rocklands and hardwood hammocks.
<i>Chamaesyce porteriana</i> (Porter's spurge)	E	Areas of low vegetation density and exposed rock, esp. along road edges.
<i>Coccothrinax argentata</i> (silver palm)	E	Pine rocklands and hardwood hammocks.
<i>Crossopetalum ilicifolium</i> (quail or Christmas berry)	E	Pine rocklands, hardwood hammocks and edge of sinkholes.
<i>Dichromena floridensis</i> (white-top sedge)	R	Open areas with little or no shade.
<i>Ernodea cokeri</i> (one-nerved ernodea)	E	Pine rocklands.
<i>Ilex krugiana</i> (Krug's holly)	E	Pine rocklands, hardwood hammocks, and disturbed ground.
<i>Ipomoea microdactyla</i> (wild potato morning glory)	E	Pine rocklands and vacant lots.
<i>Jacquemontia curtissii</i> (pineland jacquemontia)	E	Shrubby edge of pine rocklands, spoil banks, vacant lots on limestone, and unmowed grassy areas.
<i>Lantana depressa</i> (Florida lantana)	E	Open, unmowed grassy areas, near shrubby thickets in pine rocklands.
<i>Linum arenicola</i> (sand flax)	E	Endemic to pine rocklands.
<i>Linum carteri</i> (Carter's small flowered flax)	E	Endemic to pine rocklands and also found on disturbed ground.
<i>Melanthera parvifolia</i> (melanthera)	E	Open, unmowed areas, pine rocklands, and on disturbed ground.
<i>Poinsettia pinetorum</i> (rockland painted-leaf)	E	Endemic to pine rocklands.
<i>Pteris bahamensis</i> (Bahama break)	E	Open areas near exposed limestone and solution holes in pine rocklands and sinkholes.
<i>Roystonea elata</i> (royal palm)	E	Hardwood hammocks.
<i>Sachsia polycephala</i> (Bahama sachsia)	E	Endemic to pine rocklands on and near exposed limestone.
<i>Sphenomeris clavata</i> (wedgelet fern)	E	Endemic to pine rocklands on exposed limestone of shaded canal walls and solution holes.
<i>Swietenia mahagoni</i> (West Indian mahogany)	E	Hardwood hammocks.
<i>Tetrazygia bicolor</i> (Tetrazygia)	T	Hardwood shrub communities, pine rocklands, hardwood hammocks, and on disturbed ground.
<i>Tragia saxicola</i> (pineland noseburn)	E	Pine rocklands near limestone outcrops.

## 3.6.2 Vegetation

### Historic Vegetative Communities

HARB is within the historic range of the Everglades watershed and prior to development was probably comprised of a mixture of freshwater marsh and isolated tree islands (including pine rockland communities). Within HARB and the surrounding region, little remains of these original communities. Although remnant natural communities exist in very scattered patches, most have experienced extensive surface alterations during development and/or severe infestations by invasive exotic species.

The fresh water marsh ecological community is generally characterized as a shallow wetland consisting of low, emergent vegetation with few or no standing trees, and standing water throughout most of the year (USDA NRCS, 1989). The type of marsh that most likely occurred on the Base is the marl prairie community, which occurs on thin calcitic soil (i.e., marl) over limestone bedrock (AFRC, 1997). Typical vegetation of marl prairies includes beak rush (*Rhynchospora inundata*), spike rushes (*Eleocharis* sp.), white top sedge (*R. floridensis*), and muhly grass (*Muhlenbergia capillaries*). Fresh water marsh communities are extremely vulnerable to hydrological changes and the absence of fire. The soft substrate can be easily disturbed and damaged by vehicles (Florida Natural Areas Inventory [FNAI], 1990).

### Natural Communities

Even though much of the Base is developed or disturbed, some areas continue to support remnants of important natural communities that contain listed and rare species. Areas of high quality natural communities on HARB have been identified in several previous surveys (e.g., Hilsenbeck, 1993; Argonne National Laboratory, 1997) and were also observed and described in 2001 as part of field reconnaissance and surveys. Most important of these communities is the Remnant Pine Rockland area because of the number of rare and protected species that require the conditions afforded by this type of habitat.

Results of the 2001 surveys conducted in these communities are further detailed in the *Fish and Wildlife/Threatened and Endangered Species Management Component Plan* in Volume II, Appendix F (HARB, 2003a). Refer to Figure 2-2 in the INRMP for the locations of the areas described below and to Volume II, Appendix G, Table G-1, for a base-wide list of native and non-native plant species.

### 3.6.3 Fish and Wildlife and Habitat

HARB currently holds a USFWS Category 1 habitat classification and has suitable habitat for conserving and managing fish and wildlife. In general, all of the species present on the Base are at low, but stable, population levels.

Very few areas of HARB support sensitive vertebrate species. HARB has limited suitable habitat to support sensitive plant species. Nonetheless, these areas contribute important habitat to the remaining natural plant communities. The relatively small size of the Base and its urban setting preclude any management activities for the consumptive use of wildlife resources. Additional details are provided in the *Fish and Wildlife/Threatened and Endangered Species Management Component Plan* in Volume II, Appendix F (HARB, 2003a).

## 3.7 Cultural Resources

The National Park Service (NPS) conducted a survey of Homestead AFB in 1986 as part of an interagency technical assistance agreement between NPS and Homestead AFB (Air Combat Command [ACC], 1992). This survey included the entire former Homestead AFB to determine the need for and scope of any additional investigations necessary to discover significant cultural resources.

The report concluded that there was virtually no probability for the discovery of significant archaeological resources on the Base; the Florida State Historic Preservation Officer (SHPO) concurred with that conclusion. However, in accordance with AFI 32-7065, *Cultural Resources Management*, HARB has a contingency cultural resources management plan to address actions required in the event subsurface archaeological resources should be found during land disturbance activities. In addition, a petition for waiver from the Integrated Cultural Resources Management Plan (ICRMP) Requirement was filed by the base civil engineer with AFRC-HQ in January 2007.

Two historic architectural inventories were conducted on the former Homestead AFB. The first concentrated on structures constructed prior to 1945; six were identified (ACC, 1992). All but one of these pre-1945 architectural resources were destroyed during Hurricane Andrew. The surviving structure, Building 121, is a 1942 maintenance shop that has been determined ineligible for the National Register of Historic Places (USAF and FAA, 2000).

## 3.8 Hazardous Materials and Waste

The operation of aircraft, vehicles, and equipment at HARB requires the use of various hazardous materials including fuels, solvents, lubricants, and caustics. The Base has several

environmental programs that have been successful in controlling hazardous materials/waste releases to the environment. The Base Spill Plan and Hazardous materials (HAZMAT) Plan describes preventative actions that are designed to lower the potential for hazardous material spills and prevent them from entering the environment.

Another environmental program aimed at reducing hazardous waste is the Installation Restoration Program (IRP). The IRP at Homestead AFB (see Volume I, Section 2.4.2) was initiated in 1983 with a Phase I Record Search to identify potential areas of concern (AOCs) at the Base (AFCEE, 2001). In April 1993, a Resource Conservation and Recovery Act Facility Assessment were conducted to evaluate possible releases resulting from Hurricane Andrew. This assessment resulted in the identification of 68 solid waste management units or SWMUs (AFCEE, 2001). As of the end of 2006, there are 23 active IRP sites (see Volume I, Figure 3-4; 21 CERCLA sites and two petroleum sites) within the Base. Table 3-3 provides the site identifications, sites descriptions, regulatory document status, and current site status.



Table 3-5

**Air Force Reserve Command (AFRC) IRP Site Status  
Homestead Air Reserve Base, Homestead, Florida**

Site	Site Description	Document	Current Site Status
OU-1	Fire Protection Training Area No.2	ROD (1995)	NFI/LUC (soil)
OU-2	Residual Pesticide Rinse Area	ROD (1996)	NFI/LUC (soil)
OU-3	PCB Spill Area	ROD (1994)	NFA
OU-4	Motorpool Oil Spill (Bldg. 312)	ROD (1995)	NFI/LUC (soil)
OU-5	Electroplating Waste Disposal Area	ROD (1997)	NFI/LUC (soil)
OU-7	Entomology Storage Area	ROD (1998)	GW LTM (annual)
OU-8	Fire Protection Training Area No.3	DD (1997)	NFI/LUC (soil)
OU-9	Boundary Canal	ROD (2003)	NFRAP
OU-10	Former Landfill	Closure Ltr. (1997)	NFRAP
OU-11(A)	Reservoir/Military Canal	ROD (2003)	Sediments LTM (annual)
OU-11(T)	Old Sewage Treatment Plant	ROD (2006)	GW LTM (annual)
OU-12	Entomology Shop (Bldg. 373)	ROD (2006)	NFI/LUC (soil)
OU-13	Hardfill Storage Area No. 3	DD (1997)	NFRAP
OU-15	Haz-Waste Storage (Bldg. 153)	ROD (2006)	GW LTM (annual)
OU-16	Hawk Missile Site/Waste Storage	Closure Ltr. (1997)	NFRAP
OU-17	C-130 Fuel Release (Bldg. 793)	Closure Ltr. (1997)	NFRAP
OU-18	Construction Debris Landfill	ROD (1998)	GW LTM (annual)
OU-19	AGE Shop (Bldg. 208)	Closure Ltr. (2001)	NFA
OU-25	Hush House Area	ROD (2006)	NFI/LUC (soil)
OU-27	Jet Engine Test Cell Facility	ROD (2006)	NFI/LUC (soil)
AOC-3	Munitions Storage Area	ROF (2000)	NFI/LUC (soil)
<b>Petroleum Sites</b>			
SS-02A	Bulk Storage Facility	N/A	GW LTM (annual)
SS-15C	Fuel Pipeline	N/A	GW LTM (annual)

Source: HARB, 2003b.

Key:

Site

OU = Operational Unit  
AOC = Area of Concern  
SS = State Site.

Status

DD = Decision Document.  
IRA = Interim Remedial Action.  
LTM = Long-Term Monitoring.  
LUC = Land Use Controls.  
MOP = Monitoring Only Plan.  
NA = Natural Attenuation.  
NFA = No Further Action.  
NFI = No Further Investigation.

ROD = Record of Decision.

ROF = Record of Findings.

This section of the EA assesses potential environmental consequences associated with the Proposed Action and No-Action alternatives. Potential impacts are discussed in the context of the scope of the Proposed Action described in Section 2.0 and the affected environment discussed in Section 3.0. Section 4.1 addresses the environmental consequences of the Proposed Action while the environmental consequences associated with the No-Action alternative are address in Section 4.2.

### 4.1 Proposed Action Environmental Consequences

#### 4.1.1 Air Quality

##### **Proposed Action (Implementation of Updated INRMP)**

No effect would be expected. There would be no activities completed under the Proposed Action that would increase air emissions. Activity changes associated with the military mission (e.g., new equipment, increase personnel, construction or modification of existing facilities, or increase in military operations) are activities that may result in potential changes in air quality conditions. None of these activities are associated with the Proposed Action. Therefore, there would be no effects on air quality as a result of implementation of the Proposed Action.

#### 4.1.2 Noise

##### **Proposed Action (Implementation of Updated INRMP)**

No effect would be expected. There would be no activities completed under the Proposed Action that would increase noise. Activity changes associated with the military mission (e.g., new equipment, increase personnel, construction or modification of existing facilities, or increase in military operations) are activities that may result in potential changes in the noise environment. None of these activities are associated with the Proposed Action. Therefore, there would be no effects on noise level or sound quality as a result of implementation of the Proposed Action.

### **4.1.3 Land Use and Socioeconomic Conditions**

#### **Proposed Action (Implementation of Updated INRMP)**

Beneficial impacts would be expected to land use resources. The Proposed Action provides guidance on coordinating Base management efforts with land use management plans and programs with entities off base, (e.g., the South Florida Ecosystem Restoration Task Force, the South Dade Land Use and Water Management Plan, and the SFWMD) and provides procedures for integrating the management concept of the INRMP into all existing planning and management processes.

Achievement of INRMP objectives would minimize existing conflicts between military mission requirements and natural resources, and would ensure that new construction and training activities did not undermine ecological processes or interfere with natural restoration initiatives through the development of site selection and development guidelines.

No effect would be expected to socioeconomic resources. Public access to the Base would not be improved because of security reasons.

### **4.1.4 Geological and Soil Resources**

#### **Proposed Action (Implementation of Updated INRMP)**

Beneficial impact would be expected. Implementation of the Proposed Action would continue existing HARB practices for effective soil erosion. Additional procedures in the areas of grounds maintenance and landscaping would be implemented that would supplement existing soil erosion procedures.

### **4.1.5 Surface Water**

#### **Proposed Action (Implementation of Updated INRMP)**

Beneficial impacts would be expected. The Proposed Action recognizes programs, such as the IRP and Storm Water Pollution Prevention Program (SWPPP) in the protection of water quality. In addition, recommendations of the INRMP would contribute to the protection of water quality through updated instructions for grounds maintenance, removal of invasive and exotic species in canals and implementation of xeriscaping methods. In addition, the INRMP provides for water conservation and surface water improvement studies and the establishment of monitoring procedure for achieving wetland and water quality objectives.

A recommended feasibility study proposed in the INRMP for modification to infield wetlands to ensure the safety of the military mission may have a short-term adverse effect to wetland resources.



Potential wetland impacts would be offset by improvement in surface water drainage, wetland mitigation, if necessary, and increased safety in conducting the military mission.

#### **4.1.6 Biological Resources**

##### **Proposed Action (Implementation of Updated INRMP)**

**Threatened and Endangered Species.** Beneficial impacts would be expected. Under the Proposed Action, restoration of the remnant pine rockland, a threatened community consisting of endemic south Florida species would occur. In addition, the INRMP provides for the overall enhancement, conservation, and protection of threatened and endangered plant and animal species within the limitations of the military mission. For example, enhanced protection of the state-listed burrowing owl would occur through increased coordination and communication between site managers and ground maintenance contractors, as well as educational efforts. Also, under the Proposed Action, a Base-wide initiative for controlling invasive and exotic plant and animal species would be implemented.

**Wildlife and Vegetation.** Beneficial impact would be expected. Implementation of the Proposed Action would result in improved habitat conditions through the control of invasive and exotics plant and animal species.

#### **4.1.7 Cultural Resources**

##### **Proposed Action (Implementation of Updated INRMP)**

No effect would be expected. No impacts to cultural or archeological resources would be expected as a result of the Proposed Action.

#### **4.1.8 Hazardous Materials and Waste**

##### **Proposed Action (Implementation of Updated INRMP)**

No effect would be expected. Under the Proposed Action HARB would continue its existing IRP activities and all hazardous and toxic materials would continue to be handled in accordance with Federal laws and USAF regulations. There would be no increase in the generation of hazardous and toxic materials as a result of the Proposed Action. All existing programs to reduce the amount of hazardous materials and waste on the Base would continue.

## 4.2 No-Action Alternative

No adverse effect to natural resources would be expected. However, under the No-Action alternative, natural resource management at HARB would continue according to the earlier 2004 INRMP. Therefore, HARB would not be in compliance with the changes to the SAIA and other natural resources guidance that have occurred since then.

## 4.3 Cumulative Impacts

Cumulative impacts are the combined and/or incremental effects upon the environment that could potentially occur as a result of past, present, and reasonably foreseeable future actions, including the Proposed Action. The purpose of addressing cumulative impacts in the context of this EA is to address the incremental contribution of the Proposed Action to the effects of a broader range of factors.

The scenario for addressing cumulative impacts relevant to the Proposed Action includes two major factors: trends of increasing development and population growth in this region, and regional measures for the conservation and preservation of natural resources. Through the continued implementation of the INRMP, HARB would continue a comprehensive natural resource management strategy that represents compliance, restoration, prevention and conservation; improves the existing management approach; and meets legal and policy requirements consistent with broader natural resource management philosophies. In conjunction with this approach, HARB will engage in active partnering, information sharing, and participation with government and non-government stakeholders involved in natural resource management initiatives.

While growth and development can be expected to continue adjacent to HARB boundaries and within surrounding natural areas, cumulative adverse impacts to these natural resources would not be anticipated when considered with the effects of activities associated with the proposed management measures contained within the INRMP.



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## **Finding of No Significant Impact for Implementing an Integrated Natural Resources Management Plan for Homestead Air Reserve Base, Florida**

**AGENCY:** United States Air Force Reserve Command (AFRC)

**BACKGROUND:** Pursuant to the Council on Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508) for implementing the procedural provisions of the National Environmental Policy Act (NEPA; 42 United States Code [U.S.C.] 4321 et seq.) and AFPD 3270, Environmental Quality, the United States Air Force (USAF) has conducted an Environmental Assessment (EA) of the potential effects associated with implementing an Integrated Natural Resources Management Plan (INRMP) at Homestead Air Reserve Base (HARB), Florida. The AFRC has prepared this Integrated Natural Resources Management Plan (INRMP) in accordance with the provisions of the Sikes Act Improvement Act of 1997 and AFI 32-7064, "*Integrated Natural Resources Management*".

**PROPOSED ACTION:** The USAF proposes to continue implementation of the INRMP in accordance with the Sikes Act Improvement Act (SAIA) and AFI 32-7064, which supports the management of natural resources as described by the plan itself. The purpose of the Proposed Action is to carry out the resource-specific management measures developed in the INRMP in accordance with the SAIA. Continued implementation of the INRMP would enable HARB to effectively manage the use and condition of natural resources located on the Base primarily to protect the natural setting for training purposes and would support the USAF's continuing need to ensure that the mission is conducted while practicing sound resource stewardship and complying with environmental policies and regulations.

The INRMP supports an ecosystem management approach and includes natural resource management measures to be undertaken on HARB, Homestead, Florida. The Proposed Action focuses on a 5-year planning period, which is consistent with the timeframe for the management measures described in the INRMP. This planning period began in FY2010 and ends in FY2014. Additional environmental analysis will be required as new management measures are developed for the next planning period and over the long-term (i.e., beyond the next 5 years).

**ALTERNATIVES:** The development of the proposed management practices for the INRMP included a detailed evaluation of alternative management scenarios. This analysis involved the review of accepted criteria, standards, guidelines, as well as laws and executive orders for natural resources management. Furthermore, the analysis included a comprehensive review of land areas on the Base, resources present, and each of the land areas role within the overall mission of the Base. Once the mission and resources for each land area was evaluated, various resource management scenarios were evaluated to determine the appropriate management measures for each land area. The outcome of the analysis led to the development of the Proposed Action as described above. Consistent with the intent of NEPA, this process focused on identifying a range of reasonable management alternatives and, from that, developed a plan that could be implemented, as a whole, to the foreseeable future. Management alternatives determined to be infeasible were not analyzed further. As a result of the process, the EA formally addresses two alternatives: the Proposed Action (i.e., implementation of the updated INRMP) and the No-Action Alternative.

The continuation of existing (i.e., baseline) conditions of the affected environment, without implementation of the Proposed Action, is referred to as the no-action alternative. Inclusion of a no-



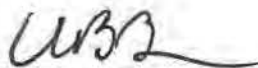
action alternative is prescribed by CEQ regulations and serves as benchmark against which the Proposed Action could be evaluated. Implementing the no-action alternative would mean that land management practices would remain the same and would continue without adherence to the post-2004 SAIA amendments and other related natural resources guidance. Current management measures for natural resources would remain in effect and existing conditions would continue. New natural resource management measures that address current conditions would not be implemented.

**FACTORS CONSIDERED IN DETERMINING THAT NO ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED:** Analyses performed in the EA address potential effects of the Proposed Action and the no-action alternative on resources and areas of environmental concern that could be affected by the INRMP. These include land use, geological resources, water resources, biological resources, cultural resources, and socioeconomics. Implementation of the Proposed Action would result in beneficial effects on identified resources and areas of environmental concern.

**FINDING OF NO SIGNIFICANT IMPACT (FONSI):** Based on the results of the EA, it is determined that implementation of the Proposed Action would have no significant or adverse direct, indirect, or cumulative impacts on the quality of the natural or human environment. Implementation of the INRMP would be expected to improve existing conditions at HARB as shown by the potential for beneficial effects. The Proposed Action would enable HARB to achieve its goal of maintaining ecosystem viability, complying with environmental policies and regulations, and ensuring sustainability of desired military training conditions. Because there would be no significant environmental impacts resulting from implementation of the Proposed Action, an Environmental Impact Statement (EIS) is not required and will not be prepared.

The public and concerned organizations, including minority, low-income, disadvantaged, and Native-American groups, were notified of the findings and conclusions of this EA by an announcement of the availability of a FONSI in local newspapers and by the availability of the EA and the HARB INRMP for public review for 30 days. Copies of the FONSI, EA, and INRMP were made available for public review at the Homestead Branch of the Miami Dade County Library located at 700 N. Homestead Blvd. in Homestead, Florida.

Any interested party wishing to make comments on the EA and the FONSI, were instructed to submit their comments in writing to the Public Affairs Office, 482 FW/PA, 29050 Coral Sea Boulevard, P.O. Box 46, Homestead ARB, Florida 33039-1299. The deadline for receipt of comments was 30 days after the notice of availability was published on 20 September 2009. No written comments were received during the public review period.



William B. Binger, Brigadier General, USAFR  
Commander, 482<sup>nd</sup> Fighter Wing  
Homestead Air Reserve Base, FL 33039-1299

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Date